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Amendments to the Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

Claim 1 (currently amended): A computer implemented method for numeric simulation of an electric circuit influenced by noise, comprising ~~for generating at least one sequence of random numbers of 1/f noise by a computer system, which comprises~~ the steps of:

numerically simulating the electric circuit using a model including input channels, noise input channels and output channels, the behavior of the input channels and of the output channels being described by a system of differential equations or a by a system of differential algebraic equations;

in the numerical simulation step, calculating an output vector for an input vector present on the input channels and a noise vector y of 1/f distributed random numbers present on the noise input channel, wherein generation of the noise vector y includes the steps of:

determining a desired spectral value β;

PAGE 2/23 * RCVD AT 5/28/2007 8:04:31 PM [Eastern Daylight Time] * SVR:USPTO-EFXRF-2/14 * DNIS:2738300 * CSID:9549251101 * DURATION (mm-ss):05-28

determining a number of the random numbers of the 1/f noise to be generated;

determining an intensity constant const;

setting a starting value for a running variable n;

performing a loop-type repetition until a desired number of elements y(n) of a vector $\underline{y}$ of length n is calculated from 1/f-distributed random numbers, by the steps of:

increasing a current value of the running variable n by 1;

setting a simulation time step $[t_{n-1}; t_n]$;

determining elements $\underline{\underline{C}}_{ij}$ of a covariance matrix $\underline{\underline{C}}$ of dimension (n × n) according to:

$$\underline{\underline{C}}_{ij} := const \cdot \left(-\left|t_j - t_i\right|^{\beta+1} + \left|t_{j-1} - t_i\right|^{\beta+1} + \left|t_j - t_{i-1}\right|^{\beta+1} - \left|t_{j-1} - t_{i-1}\right|^{\beta+1}\right)$$
$$i, j = 1, \ldots, n$$

determining an inverted covariance matrix $\underline{\underline{C}}^{-1}$ by inverting the covariance matrix $\underline{\underline{C}}$;

determining a variable σ in accordance with

$$\sigma = \mathrm{sqrt}(1 / e(n,n)),$$

where sqrt denotes a square root function, and e(n,n) denotes an element of the inverted covariance matrix $\underline{\underline{C}}^{-1}$ indexed by (n,n);

determining a (0,1)-normally distributed random number which forms an nth component of a vector $\underline{x}$ of length n;

forming a variable μ from first (n-1) components of an nth row of the inverted covariance matrix $\underline{\underline{C}}^{-1}$ and (n-1) elements of the vector $\underline{y}$ calculated for a preceding (n-1) simulation time step, according to:

$$\mu := -\frac{y_{(n-1)}{}^{T} \cdot \underline{\underline{C}}^{-1}_{\bullet,n}}{\underline{\underline{C}}^{-1}_{n,n}}$$

where $y_{(n-1)}$ denotes first (n-1) elements of the vector $\underline{y}$, $\underline{\underline{C}}^{-1}_{\bullet,n}$ denotes the first (n-1) components of the nth row of the inverted covariance matrix $\underline{\underline{C}}^{-1}$, and $\underline{\underline{C}}^{-1}_{n,n}$ denotes a component of the inverted covariance matrix $\underline{\underline{C}}^{-1}$ indexed by (n,n); and

calculating an element y(n) of the vector y of length n from the 1/f-distributed random numbers, according to:

$$y(n) = x(n) * \sigma + \mu;$$

~~storing and~~ outputting the at least one sequence of random numbers of 1/f noise.

Claim 2 (currently amended): A computer implemented method for numeric simulation of an electric circuit influenced by noise, comprising ~~for generating at least one sequence of random numbers of 1/f noise by a computer system, which comprises~~ the steps of:

numerically simulating the electric circuit using a model including input channels, noise input channels and output channels, the behavior of the input channels and of the output channels being described by a system of differential equations or a by a system of differential algebraic equations;

in the numerical simulation step, calculating an output vector for an input vector present on the input channels and a noise vector y of 1/f distributed random numbers present on the

noise input channel, wherein generation of the noise vector $\underline{y}$ includes the steps of:

determining a desired spectral value β;

determining a number of the random numbers of the 1/f noise to be generated;

determining an intensity constant const;

setting a starting value for a running variable n;

calculating q sequences of the random numbers of the 1/f noise simultaneously, by performing loop-type repetitions until a desired number of elements $y_{k,n}$ of a vector $\underline{y}$ of length n is calculated from 1/f-distributed random numbers, by the steps of:

increasing a current value of the running variable n by 1;

setting a simulation time step $[t_{n-1}; t_n]$;

determining elements $\underline{C}_{ij}$ of a covariance matrix $\underline{C}$ of dimension $(n \times n)$ according to:

$$\underline{\underline{C}}_{ij} := const \cdot \left(-\left|t_j - t_i\right|^{\beta+1} + \left|t_{j-1} - t_i\right|^{\beta+1} + \left|t_j - t_{i-1}\right|^{\beta+1} - \left|t_{j-1} - t_{i-1}\right|^{\beta+1} \right)$$
$$i, j = 1, \ldots, n$$

determining an inverted covariance matrix $\underline{\underline{C}}^{-1}$ by inverting the covariance matrix $\underline{\underline{C}}$;

determining a variable σ in accordance with

$$\sigma = \mathrm{sqrt}(1 / e(n,n)),$$

where sqrt denotes a square root function, and e(n,n) denotes an element of the inverted covariance matrix $\underline{\underline{C}}^{-1}$ indexed by (n,n);

determining a quantity q of (0,1)-normally distributed random numbers $x_{k,n}$ which form a respective last component of vectors $\underline{x}_k$ of length n, where k = 1, ..., q,

forming q variables μ_k according to:

$$\mu_k := -\frac{y_{(n-1),k}{}^T \cdot \underline{\underline{C}}^{-1}_{\bullet,n}}{\underline{\underline{C}}^{-1}_{n,n}}$$

where $y_{(n-1),k}$ denotes first (n-1) components of the vectors $\underline{y}_k$ that were calculated for a preceding simulation time step, $\underline{\underline{C}}^{-1}_{\bullet,n}$ denotes the first (n-1)

components of the nth row of the inverted covariance matrix $\underline{\underline{C}}^{-1}$, and $\underline{\underline{C}}^{-1}_{n,n}$ denotes the element of the inverted covariance matrix $\underline{\underline{C}}^{-1}$ indexed by (n,n), where k = 1, ..., q; and

calculating q elements $y_{k,n}$ which form a respective nth component of the vector $\underline{y}_k$ of length n from 1/f-distributed random numbers, according to:

$$y_{k,n} = x_{k,n} * \sigma + \mu_k,$$

where k = 1, ..., q;

~~storing and~~ outputting at least one of the q sequences of random numbers of 1/f noise.

Claim 3 (original): A method for simulating a technical system subject to 1/f noise, which comprises the steps of:

determining random numbers according to claim 1; and

using the random numbers for modeling variables present on input channels of the technical system.

Claim 4 (original): A method for simulating a technical system subject to 1/f noise, which comprises the steps of:

determining random numbers according to claim 2; and

using the random numbers for modeling variables present on input channels of the technical system.

Claim 5 (currently amended): A <u>computer running a </u>computer program, comprising:

computer-executable instructions for carrying out the method according to claim 1 for determining the sequences of random numbers of the 1/f noise.

Claim 6 (currently amended): A <u>computer running a </u>computer program, comprising:

computer-executable instructions for carrying out the method according to claim 2 for determining the sequences of random numbers of the 1/f noise.

Claim 7 (currently amended): A <u>computer running the instructions stored on a </u>computer-readable data medium having the computer-executable instructions according to claim 5.

Claim 8 (currently amended): A computer running the instructions stored on a computer-readable data medium having the computer-executable instructions according to claim 6.

Claim 9 (original): A downloading method, which comprises the step of:

downloading the computer program according to claim 5 from an electronic data network onto a computer connected to the electronic data network.

Claim 10 (previously presented): The method according to claim 9, which further comprises using the Internet as the electronic data network.

Claim 11 (original): A downloading method, which comprises the step of:

downloading the computer program according to claim 6 from an electronic data network onto a computer connected to the electronic data network.

Claim 12 (original): The method according to claim 11, which further comprises using the Internet as the electronic data network.

Claim 13 (previously presented): A computer system, comprising:

processor programmed for executing the method for determining the sequences of random numbers of the 1/f noise according to claim 1.

Claim 14 (previously presented): A computer system, comprising:

processor programmed for executing the method for determining the sequences of random numbers of the 1/f noise according to claim 2.

Claim 15 (previously presented): A computer system, comprising:

processor programmed for executing the method for determining the sequences of random numbers of the 1/f noise according to claim 3.

Claim 16 (previously presented): A computer system, comprising:

processor programmed for executing the method for determining the sequences of random numbers of the 1/f noise according to claim 4.

Claim 17 (previously presented): A method for simulating a technical system subject to 1/f noise, which comprises the steps of:

determining random numbers according to claim 1; and

using the random numbers for fixing variables present on input channels of the technical system; and

simulating the technical system and outputting the result of the simulation.

Claim 18 (previously presented): A method for simulating a technical system subject to 1/f noise, which comprises the steps of:

determining random numbers according to claim 2; and

using the random numbers for fixing variables present on input channels of the technical system; and

simulating the technical system and outputting the result of the simulation.